bog at the southerly end of the village which contains a quantity of *Kalmia polifolia* Wang., the most southerly record for the state. Across a sandy ridge from this bog on the banks of the Pomperaug I found in 1884 *Hibiscus Moscheutus* L. The date of this record is of interest as the adjacent country has since been planted with native and exotic showy species and the present-day collector, if he found the rose-mallow there, would be apt to take it for a planted specimen, but in 1884 the place was entirely "unimproved."

Along a road leading westerly from the village of Woodbury and in the adjacent fields are a quantity of *Avena pubescens* Huds. and *Galium Mollugo* L., the former new to the state. Farther to the westward the upper reaches of a pond are covered with *Wollfia columbiana* Karst., here discovered by Eames & Godfrey, and near by along a brook grows *Carex tribuloides* Wahlenb. var. *reducta* Bailey. Other noteworthy species of Woodbury have been mentioned in connection with their occurrence farther south.

Oxford, Connecticut.

SOME NORTH AMERICAN RELATIVES OF POLYGONUM MARITIMUM.

M. L. Fernald.

In studying a glaucous large-fruited *Polygonum* which abounds on the sandy beaches of the Magdalen Islands and on some of the sands of western Newfoundland, Cape Breton and Prince Edward Island, it has been necessary to examine in some detail the plants which have passed in America as *Polygonum maritimum*. One of these, *P. Fowleri* Robinson, is sufficiently distinct in aspect as well as in habitat to need little discussion here, although it is worthy of note that this species of damp saline shores from the Straits of Belle Isle to the mouth of the Kennebec seems nowhere to encroach on the areas occupied by either of the other two plants to be discussed; for, while one of them is known only from the sands of western Newfoundland and the islands of the Gulf of St. Lawrence and the other follows the

sands of the Atlantic from northeastern Massachusetts to Georgia, *P. Fowleri* of somewhat heavier and damper soils has not, so far as the writer can determine, been detected in western Newfoundland, on the Magdalen Islands, nor on Prince Edward Island but occurs on the outer or eastern coast of Newfoundland and follows the mainland shores from Labrador and the lower St. Lawrence around the coast of New Brunswick and the coasts of Nova Scotia, to the islands between the lower Kennebec and Casco Bay — perhaps 120 miles by the coast from the northern limit of the third member of the group.

The plant which has long passed as *Polygonum maritimum* on the coast of the Atlantic United States, the whitish plant of sea-sands from Massachusetts southward, is a prostrate annual which by the earlier students of our flora was taken to be a purely American representative of the European *P. maritimum* L. To be sure, Linnaeus had included the American plant with his frutescent Mediterranean species, *P. maritimum*, saying: "*Habitat* Monspelii, *in* Italia, Virginia. ♄ ";[1] but by Pursh it was treated, with a very inaccurate statement of its characters, as an American variety, his *P. marinum*, β. *roseum*, said to be a "small prostrate evergreen [!] plant, with white or rose-coloured flowers."[2] Nuttall, however, better understood the situation when he treated the plant of our Atlantic sands as a new species, *P. glaucum*, and said: "HAB. On the sandy beach of the sea, around Egg-Harbour, New Jersey; possesses much the aspect of *P. aviculare*, but produces flowers which are conspicuous and elegant, and occurs in situations which pronounce it native; not naturalized as *aviculare*, the seed is also remarkably distinct. *A.* [*P.*] *maritimum* of Europe has never yet been found on the American sea-coast."[3] And Torrey also evinced a close knowledge of the plant when, taking up Nuttall's *P. glaucum* in 1824, he said: "It can hardly be *P. maritimum* of *Linnaeus*, a native of the shores of the Mediterranean, for that species is frutescent and evergreen, while our plant appears to be decidedly annual."[4]

Nevertheless, in spite of Linnaeus's statement that his Mediterranean *Polygonum maritimum* was frustescent and the emphasis laid upon this character by Torrey, Nuttall's annual *P. glaucum* was soon

[1] L. Sp. Pl. 361 (1753).
[2] Pursh, Fl. Am. Sept. i. 269 (1814).
[3] Nutt. Gen. i. 255 (1818).
[4] Torr. Fl. N. & M. U. S. i. 401 (1824).

re-merged with *P. maritimum* and has been so denominated by practically every subsequent student of the group, although the duration of the plant has caused considerable embarrassment. Thus Torrey himself, in 1843, placing *P. glaucum* again in *P. maritimum*, said: "Annual (in the Southern States apparently perennial, and even suffrutescent as in the plant of the Mediterranean shores)"; but in a succeeding paragraph he further qualified his statement by adding: "It is not improbable that the southern plant may be only an annual; for I have not seen the root, and ours is hard and woody at the base, particularly late in the season." [1] The first edition of Gray's Manual indicated it as annual, doubtfully perennial; the second, third and fourth editions called it annual but further confused its identity by reducing it to the very different *P. aviculare*, var. *littorale* Link and adding as synonyms the equally different *P. maritimum* Ray (*P. Raii* Bab.) and the even more distinct *P. Roberti* Loisel. In the fifth edition of the Manual *P. glaucum* somewhat cleared itself of these entangling alliances but still passed as *P. maritimum* and was said to have "a hard and somewhat woody and perennial root...at the north apparently only annual"; in the sixth edition, as *P. maritimum*, it is called "*Perennial*, at length woody at base (or sometimes annual)"; and in the seventh edition, as species no. 1, *P. maritimum*, it is indicated with no. 2, *P. Fowleri* (always annual so far as the writer has observed at numerous stations) as an exceptional species of the section *Aviculariа*, which is said to consist of "glabrous annuals, except nos. 1 and 2." Wood, also, passed through a similar psychological (not to say imitative) change in regard to the plant, in the second edition of his Class Book (1847) saying it was annual and treating it as *Polygonum aviculare*, β. *glaucum*, a treatment which also occurs in the so-called "Forty-first Edition" of 1856. In the edition of 1861, however, he swung with the general tide, treated the plant as *P. maritimum* and said that it was perennial. Small, also, in his Monograph of the North American Species of Polygonum [2] and in Britton & Brown's Illustrated Flora and the different editions of Britton's Manual has accepted the traditional statement and says of the plant, as *P. maritimum*: "Perennial or sometimes annual."

The conspicuous feature of these characterizations, it will be seen, is that, when treated as *Polygonum maritimum*, the description of

[1] Torr. Fl. N. Y. ii. 153 (1843).
[2] Small, Mem. Dept. Bot. Columbia Col. i. 100 (1895).

Nuttall's *P. glaucum* has been forced to fit the Linnean definition as a perennial, but usually with apologies for its annual character on our coast. When, however, the plant has stood upon its own merits it has as regularly been described as an annual. In his experience with the plant in the field the writer has never seen any reason to question Torrey's original statement that *P. glaucum* is "decidedly annual," nor do the herbarium specimens available give any evidence that this is not the fact.

When, however, we examine authentic material of *Polygonum maritimum*, the plant of the sands of the Mediterranean, but found locally northward on the Atlantic coast as far as the Channel Islands and possibly England,[1] we find that, although it may sometimes flower as an annual or biennial, it is, as described by Linnaeus, Torrey, and the Mediterranean botanists, ordinarily a suffruticose plant with stout branches 1.5–4 mm. thick at base, and usually closely invested with very conspicuous overlapping white hyaline stipules, which are 1–2 cm. long and have numerous (usually 12) nerves, the longest of which are 8–18 mm. long. The annual American *P. glaucum*, on the other hand, has the tough but scarcely ligneous branches only 1–2 mm. thick, the lower internodes commonly exceeding the stipules, which are only 7–10 mm. long, with the longest nerves only 5–8 mm. in length. In their extremes the measurements of these two plants slightly overlap, but when good fruit is examined it is found that the European *P. maritimum* has achenes 4.5–5 mm. long, with faces 2.5–3.5 mm. broad; while the American *P. glaucum* has the achenes distinctly smaller, 3–4 mm. long, with faces 1.6–2.2 mm. broad. In view of this aggregation of characters there seems, then, no good reason for longer confusing the endemic American *P. glaucum* Nutt. with its cousin of southern Europe, *P. maritimum* L.

The other glaucous large-fruited and petaloid-flowered *Polygonum* of the sands, the plant which abounds on the Magdalen Islands and is found on the neighboring sands of Prince Edward Island, Cape Breton and western Newfoundland, has also had an unfortunate experience in maintaining its own identity. This plant, like *P. glaucum*, is an annual, but it has greener usually less revolute leaves, shorter and therefore less conspicuous stipules, only 4–8 mm. long and with the longest nerves 3–5 mm. in length; and its achenes are

[1] "Very rare and perhaps extinct in England.... In the Channel Islands it is much more plentiful." — Syme, Engl. Bot. viii. 70 (1873).

as large as in the European *P. maritimum*, in well developed plants 4.5–5.3 mm. long, with faces 3–3.5 mm. broad. Its handsome white-rimmed flowers, too, are more obviously herbaceous below than in either *P. glaucum* or *P. maritimum*. This plant from the Gulf of St. Lawrence closely matches *P. Raii* Babington, a species of maritime sands from Scandinavia and Great Britain to northeastern France, and there seems no reason for not so calling it.

But unfortunately the name *Polygonum Raii* (often spelled *Rayi*) has recently been set aside by many European botanists and has been replaced by the name *P. Roberti* Loiseleur; and following this European lead American students have begun to use the name *P. Roberti* instead of *P. Raii*.[1] This understanding of the matter arose, apparently, from the fact that Meisner states in DeCandolle's Prodromus that material sent to him by Loiseleur was a mixture, but that the name properly belonged to *P. Raii*. Loiseleur's species was described from maritime sands of the Mediterranean, and since *P. Raii*, according to Rouy,[2] does not occur south of the shores of the English Channel (la Manche), it is hardly probable that *P. Roberti*, collected by Robert on the sands near Toulon, is identical with the northern plant. Furthermore, Rouy maintains[3] as *P. Roberti* a very distinct plant of the Mediterranean sands, with achenes only 2–3 mm. long. Under these circumstances it is apparently wiser to reinstate the name *P. Raii* for the northern plant to which it was originally applied.

As already pointed out by Dr. Robinson,[4] the plant which for some time passed in America as *Polygonum Raii*, the plant of damp brackish or saline shores from southern Labrador to southern Maine, is an endemic American species, *P. Fowleri*. This species, which occurs also upon our northwestern coast (but apparently not from "New Brunswick to Vancouver Island," as stated by Small[5]) and was described by Meisner from Sitka as *P. littorale*, β. *buxifolium*[6] (as shown by the original material in the DeCandolle herbarium), lacks the glaucous hue of *P. maritimum*, *P. glaucum*, and *P. Raii*, ordinarily having a warm green or purplish tone. It is also quickly distinguished from those three species of the sands by its blunt or round-tipped

[1] See Robinson, Rhodora, iv. 67 (1902); Eames, ibid. xi. 93 (1909); Fernald, ibid. xiii. 138 (1911).

[2] Rouy, Fl. Fr. xii. 110, 111 (1910).

[3] Rouy, l. c.

[4] Robinson, Rhodora, l. c.

[5] Small, Mem. Dept. Bot. Columbia Col. i. 98 (1895).

[6] Meisner in DC. Prodr. xiv. 98 (1856).

usually flat leaves, by the short faintly nerved stipules, by the smaller very herbaceous calyx with oblong (not oval or obovate) narrowly crimson- or pink-margined lobes, and by its olivaceous (not castaneous or blackish) achene. In fact, *P. Fowleri* in its characters and aspect as well as its habitat is quite unlike the three plants with which it has sometimes been confused and has its affinities much more with the boreal *P. islandicum* Meisner, the range of which it overlaps on the Straits of Belle Isle.

Gray Herbarium.

A TERATOLOGICAL SPECIMEN OF CYPRIPEDIUM ACAULE.

John B. May, M. D.

Abnormalities among flower forms are often of great interest to the student of botanical morphology, in that they sometimes furnish a clue or a connecting link to an earlier and now extinct form of the plant. I therefore make these notes of a specimen of *Cypripedium acaule*, found May 26, 1912, growing in the wild garden of Mr. Francis Southwick, at Waban, Mass. The two upper or lateral petals were enlarged, with irregular, wavy edges, part of each petal showing the parallel veining of the typical form, and part presenting the pink coloring, netted veining, and in-curved edges of the third petal or labellum. The relationship between the three petals was shown very plainly, while in the normal blossom the layman usually considers the lateral petals as sepals. The sepals and column were apparently normal.

After photographing and sketching the flower, I rubbed some of its own pollen on the stigma in an attempt at fertilization, with the rather remote possibility of seedlings appearing which would perpetuate the oddity.

Henry Baldwin, in his "Orchids of New England," describes a specimen of *Cypripedium spectabile* found in 1881 near Lake Michi-